DOCUMENT RESUME

ED 325 281 RC 017 849

AUTHOR	Podgursky, Michael
TITLE	Job Displacement and the Rural Worker.
INSTITUTION	Economic Policy Inst., Washington, DC.
SPONS AGENCY	Ford Foundation, New York, N.Y.
REPORT NO	ISBN-0-944826-14-8
PUB DATE	89
NOTE	27p.
PUB TYPE	Reports - Evaluative/Feasibility (142)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	*Dislocated Workers; *Economic Impact; *Employment Patterns; Employment Statistics; Federal Government; Job Layoff; Labor Economics; Labor Market; Public Policy; *Rural Areas; *Rural Urban Differences; *Structural Unemployment; Unemployment
IDENTIFIERS	Bureau Of Labor Statistics

ABSTRACT

High rates of unemployment in rural areas poses questions as what education can do with the problem. This report examines the effects of rural American economies as they grow away from agriculture and toward dependence on manufacturing and service industries. Using data from the federal Bureau of Labor Statistics' Displaced Worker Survey, the study examines the extent of permanent job losses in rural areas compared with large urban areas. It identifies rural workers who were displaced from jobs due to plant shutdowns or other permanent layoffs, showing that such layoffs have been proportionately higher in rural labor markets than in urban counterparts. The report describes economic losses caused by job displacement, particularly the long periods of joblessness and displacement caused by shifts toward lower-paying jobs in rural areas. Judged by medians, rural displaced workers experienced jobless periods nearly two-thirds longer than urban workers. They were also 50% more likely to experience severe loss of earnings following displacement. The loss of group health insurance is another significant problem for displaced rural workers. Only 65% of rural workers obtained new health insurance coverage, as compared with 74% of urban workers. While annual wages in urban areas have grown as fast as inflation, rural workers have seen the purchasing power of their annual wages decrease by 7% in recent years. The report concludes that any policy response must be directed toward renewed earnings growth for rural employment. (TES)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED325281

Job Displacement and the Rural Worker

Michael Podgursky

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Michael Podgursky
Judith Maher
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

EMBARGOED
HOLD FOR RELEASE
6:00 PM, July 21, 1990

RC017849

Economic Policy Institute

Job Displacement and the Rural Worker

Michael Podgursky

Economic Policy Institute

1730 Rhode Island Ave. NW, Suite 812, Washington, D.C. 20036
ISBN 0-944826-14-8

Michael Podgursky is Associate Professor of Economics at the University of Massachusetts, at Amherst. He has published articles on the labor market experience of displaced workers in a variety of academic journals.

The author wishes to thank Larry Mishel of the Economic Policy Institute and Paul Swaim of the U.S. Department of Agriculture for many critical comments and suggestions on earlier drafts of this report.

This report, one of a series of Economic Policy Institute studies on the economic problems of rural America, was funded by a grant from the Ford Foundation.

Copyright© 1989
ECONOMIC POLICY INSTITUTE
1730 Rhode Island Avenue, NW
Suite 812
Washington, DC 20036

ISBN 0-944826-14-8

Table of Contents

Introduction 1

The Displaced Worker Survey 3

The Extent of Urban and Rural Displacement 3

Characteristics of Displaced Workers 3

Unemployment Following Displacement 5

Earnings and Benefit Loss 8

Multivariate Analysis of Economic Losses 11

Conclusions 12

Appendix 13

Endnotes 18

Bibliography 19

Introduction

In the 1970s, rural areas enjoyed economic growth and vitality. Structural change and economic dislocation, however, have been the dominant economic forces in rural life in the 1980s. Over the last few decades, the rural economy has become more dependent on manufacturing and services, and less dependent on natural resource-based industries such as agriculture and mining (U.S. Department of Agriculture, 1987). As a result, rural workers have become more vulnerable to the recent rapid shifts in trade and technology that have led to widespread job loss during both expansion and recession years in the 1980s. A wealth of research has shown that many workers suffer large economic losses as a result of displacement (Mishel and Podgursky, 1988; Ruhm, 1987).[1] This report examines the extent of permanent job loss in rural areas and the associated economic losses (particularly long periods of joblessness and the shift to lower paying jobs).

Rural workers have become more vulnerable to the recent rapid shifts in trade and technology that have led to widespread job loss....Many workers suffer large economic losses as a result of displacement.

Why should we expect a different rural experience? Any individual job seeker will fare better if he or she has more potential employers to contact. Since the pool of potential employers is larger in an urban labor market, a laid off urban job seeker should fare better than an equivalent rural worker. Moreover, the benefit of a large urban labor market may be even greater in a *mass layoff* situation. A mass layoff in a small labor market will put large numbers of displaced workers in competition with one another for whatever vacancies exist. This "congestion effect" will be smaller and perhaps negligible in a large urban market with a large volume of continuous labor turnover.

Earnings and employment prospects for rural workers have diminished in the 1980s....Displaced rural workers can be expected to experience more labor market difficulties than similar urban workers.

Structural employment problems in rural labor markets provide another reason to expect that rural displaced workers would fare worse than urban workers following displacement. Various studies suggest that earnings and employment prospects for rural workers have diminished in the 1980s. If so, then displaced rural workers can be expected to experience more labor market difficulties than similar urban workers. McGranahan (1988) and Bloomquist (1988), for example, show that manufacturing industries which concentrate in rural areas tend to involve low-skill production jobs while more skilled "complex" manufacturing gravitates toward urban areas. McGranahan identifies this as a source of rural difficulties since employment has declined in the type of production industries and jobs which tend to locate in rural areas.

Majchrowicz and Ghelfi (1988) document another problem in rural areas: rural employment and earnings growth

has lagged behind employment and earnings growth in metropolitan areas. For example, earnings per worker in rural areas grew nearly one percent slower per year than annual inflation from 1979 to 1986. Thus, the purchasing power of rural wages has dropped seven percent in recent years. This erosion of rural workers' earning power has occurred in each area of the country and in almost every industry sector, including services. In contrast, earnings growth in metropolitan areas matched inflation.

Rural workers have been more likely to lose their jobs than urban workers.... [and] the personal economic losses of rural workers following displacement are significantly larger than those of urban workers.

An analysis of the available data confirms that rural workers displaced from their jobs have had a more difficult adjustment experience:

- Rural workers have been more likely to lose their jobs than urban workers. Between 1981 and 1984 approximately 6.3 million workers were displaced from full-time wage and salary jobs. Of these, 1.6 million, or 26 percent, resided in rural (nonmetropolitan) areas, higher than the rural share of total employment (21 percent).

- The personal economic losses of rural workers following displacement are significantly larger than those of urban workers. Rural workers were reemployed in jobs paying 12 percent less than they were being paid in their former jobs, a loss double that of displaced workers in large urban areas. Even after adjusting for differences in worker characteristics, displaced rural workers experienced earnings reductions much larger than comparable urban workers. In addition, rural displaced workers are also more likely to lose health insurance coverage following displacement.

Rural workers also experience greater joblessness following displacement. Rural [displaced] workers...were out of work for 24 weeks while workers displaced in large urban areas were without work for 16 weeks.

- Rural workers also experience greater joblessness following displacement. Rural workers displaced between 1981 and 1984 were out of work for 24 weeks while workers displaced in large urban areas were without work for 16 weeks. A statistical analysis shows that rural workers are jobless from 2 to 43 percent longer than comparable workers in urban markets.

- Rural displaced workers tend to have less formal education than do urban displaced workers. Rural displaced workers include relatively fewer women, blacks, or Hispanics.

The Displaced Worker Survey

This report examines the adjustment experience of urban and rural displaced workers using the Bureau of Labor Statistics' Displaced Worker Survey (January 1986). This survey was specifically designed to identify workers who were permanently displaced from jobs due to plant shutdowns or other permanent layoffs.[2] For this study, the focus is on workers between the ages of 20 and 61 in January 1986 who lost full-time jobs between 1981 and 1984. An "urban" worker is defined as a worker who resides in a Metropolitan Statistical Area (MSA), as designated by the Census Bureau. MSAs range in size from 50,000 up to several million, and may include two or more cities and surrounding suburbs and communities. A "rural" worker is a worker who does not reside in an MSA. In this report "rural" and "nonmetropolitan" are used interchangeably. Details regarding the Displaced Worker Survey (DWS) and sampling procedures utilized are provided in the appendix to this report.

Permanent job loss due to plant closings and mass layoffs has been proportionately higher in rural labor markets.

The Extent of Urban and Rural Displacement

Table 1 presents data which allow the prevalence of job displacement in rural and urban areas to be assessed. There were 6.3 million workers displaced from their jobs between 1981 and 1984 (row 11). Of these, 26 percent resided in rural areas in January 1986. By comparison, average monthly employment in 1986 was 109.8 million, with 86.5 million (78.8 percent) in metropolitan and 23.1 million (21.1 percent) in nonmetropolitan rural labor markets (U.S. Department of Labor, 1987: Table 57). This suggests that permanent job loss due to plant closings and mass layoffs has been proportionately higher in rural labor markets.

Rural workers tend to be more heavily concentrated in manufacturing jobs and in less-skilled blue-collar occupations.

Characteristics of Displaced Workers

Demographic and economic characteristics of displaced workers are of interest because they are associated with differing levels of economic losses following a job loss (Table 1).[3] For example, better-educated workers generally fare better following displacement. On the other hand, manufacturing workers generally experience larger economic losses.

While the average age of displaced workers does not differ significantly between rural and urban labor markets, all of the other demographic characteristics do. Rural displaced workers on average have less formal schooling, are more likely to be male, and are much less likely to be black or Hispanic than urban workers. Rural workers had far lower

TABLE 1

Average Characteristics of Urban and Rural Displaced Workers*

Characteristic		Total	Rural	Urban	
				Small	Large
(1)	Age (yrs.)	36.3	36.3	36.1	36.4
		(.17)	(.32)	(.44)	(.23)
(2)	Education (yrs.)	12.4	11.9	12.3	12.7
		(.04)	(.07)	(.09)	(.06)
(3)	Male (%)	65.3	66.3	65.7	64.7
		(.78)	(1.4)	(1.9)	(1.1)
(4)	Black (%)	11.5	7.1	10.6	13.8
		(.52)	(.76)	(1.3)	(.77)
(5)	Hispanic (%)	6.6	2.7	3.5	9.0
		(.41)	(.49)	(.75)	(.64)
(6)	Former Weekly Earnings ($)	337	299	317	360
		(3.5)	(5.9)	(8.7)	(5.1)
(7)	Manufacturing (%)	39.6	41.8	38.8	38.7
		(.6)	(1.5)	(2.0)	(1.1)
(8)	Low Skill** (%)	34.7	40.3	40.4	30.8
		(.6)	(1.5)	(2.0)	(1.0)
(9)	Low Skill*** (%)	35.5	42.1	41.7	30.9
		(.6)	(1.5)	(2.0)	(1.0)
(10)	Sample Size	3,744	1,120	601	2,023
(11)	Weighted U.S. Total in thousands****	6,296	1,637	970	3,689
	(% of total)	(100.0)	(26.0)	(15.4)	(58.6)

* Workers aged 20-61 in January 1986 displaced from full-time jobs between 1981 and 1984. "Rural" refers to a worker not residing in a Metropolitan Statistical Area (MSA). "Small" and "Large" denote MSAs with a population of 100,000 to 500,000 and larger than 500,000, respectively. Estimated standard errors in parentheses.

** Proportion of workers whose former occupation was operator, fabricator, or laborer.

*** Proportion of workers whose former occupation was operator, fabricator, laborer, or farm worker.

**** Estimated using sampling weights provided by the Bureau of the Census.

weekly earnings on their former job, $61 or 17 percent less, than did workers in large urban areas. Rural workers also tend to be more heavily concentrated in manufacturing jobs and in less-skilled blue-collar occupations. The data in Table 1 show that there are, in fact, differences between rural and urban displaced workers.

Unemployment Following Displacement

Before examining the post-displacement experience of these workers, we first examine the extent to which rural and urban workers had advance knowledge of their layoff. In the DWS, respondents were asked a rather general question regarding whether or not they expected to be laid off ("Did [the worker] expect a layoff or had [the worker] received advance notice of a layoff or a plant or business closing?"). Table 2 reports the percentage of workers responding "yes" to this question. Roughly one-half of the DWS respondents had advance notice of or otherwise expected a layoff. This proportion does not differ significantly for urban and rural workers. Thus, differences in advance knowledge of layoff should not have created differences in the adjustment experiences of rural versus urban workers.

Roughly one-half of [displaced workers] had advance notice of or otherwise expected a layoff.

TABLE 2

Advance Knowledge of Layoff*

Residence	Percentage of Displaced Workers Receiving Advance Notice of or Who Expected a Layoff
Total	50.7 % (.8)
Rural or Nonmetropolitan	51.4 (1.5)
Small Urban	53.2 (2.0)
Large Urban	49.8 (1.1)

* Percentage responding "yes" to the following question: "Did [the worker] expect a layoff or had [the worker] received advance notice of a layoff or a plant or business closing?" For sample description and definitions, see Table 1. Estimated standard errors in parentheses.

Judged by medians, workers displaced in rural areas experienced periods without work nearly two-thirds longer than workers displaced in large urban areas.

How long are urban and rural workers without work following displacement? The DWS provides information on the number of weeks workers were jobless and available for work following displacement.[4] While many displaced workers find jobs relatively quickly, a large group experiences very long spells of joblessness following displacement (Table 3). For example, 43.8 percent of displaced workers had 12 or fewer weeks of joblessness following displacement while 38.5 percent had 27 or more weeks (see column 1). The median duration of joblessness for these displaced workers was 18 weeks, or more than four months out of work (bottom row). As expected, rural workers are without work for a longer time than are urban workers after being permanently laid off. The share of displaced workers with long spells of joblessness (27+ weeks) was 43.9 percent in rural areas but 40.1 and 35.6 percent in small and large urban areas. Among rural workers, the median length of joblessness was 24.4 weeks, or nearly six months. In contrast, the median length of joblessness for small and urban workers was 18.3 and 15.8 weeks. Judged by medians, workers displaced in rural areas experienced periods without work nearly two-thirds longer than workers displaced in large urban areas.

TABLE 3

Duration of Joblessness Following Displacement*

	Total	Rural	Urban	
			Small	Large
Total	100.0%	100.0%	100.0%	100.0%
0 to 12 Weeks	43.8	37.5	43.4	46.6
	(.8)	(1.5)	(2.1)	(1.1)
13 to 27 Weeks	17.8	18.6	16.5	17.8
	(.6)	(1.2)	(1.5)	(.8)
27+ Weeks	38.5	43.9	40.1	35.6
	(.8)	(1.5)	(2.0)	(1.1)
Median Weeks	18.0	24.4	18.3	15.8

* For sample description and definitions, see Table 1. Estimated standard errors in parentheses.

At the time they were surveyed, rural workers were more likely than urban workers to be unemployed or to have dropped out of the labor force (stopped looking for work). Again, the evidence shows rural workers having a more difficult adjustment to job loss. For example, displaced rural workers were much less likely to have been reemployed (Table 4). Overall, 77.2 percent of all displaced workers were employed on the survey date, with 11.1 percent unemployed and 11.6 percent out of the labor force (column 1). The implied unemployment rate among all displaced workers was 12.6 percent.[5] Among rural workers, however, only 72 percent were reemployed. Moreover, a much higher percentage of rural than urban workers were unemployed, 15 percent compared to roughly 10 percent. The result is a much higher rural unemployment rate (17.2 versus 10.9 percent for large urban areas).

[Displaced] rural workers were more likely than urban workers to be unemployed or to have dropped out of the labor force (stopped looking for work).

TABLE 4

Labor Force Status of Displaced Workers*

Labor Force (LF) Status	Total	Rural	Urban	
			Small	Large
Total	100.0%	100.0%	100.0%	100.0%
Employed	77.2	72.1	78.8	79.1
	(.7)	(1.3)	(1.7)	(1.7)
Unemployed	11.1	15.0	9.9	9.7
	(.5)	(1.1)	(1.2)	(1.2)
Not in LF	11.6	12.9	11.2	11.2
	(.5)	(1.0)	(1.3)	(1.3)
Unemployed Rate	12.6	17.2	11.2	10.9

* Labor Force Status in January 1986. For sample description and definitions, see Table 1. Estimated standard errors in parentheses.

This comparatively higher unemployment rate for nonmetropolitan displaced workers mirrors the higher unemployment of the rural workforce as a whole. In 1986, the average monthly unemployment rate for adults was roughly one-fourth higher in nonmetropolitan areas than in metropolitan areas (Table 5).

TABLE 5

Metropolitan and Nonmetropolitan Unemployment Rates

	Civilian Unemployment Rate	
	1986	1987
Metropolitan		
Total	6.6%	5.9%
Male 20+	5.8	5.2
Female 20+	5.9	5.2
Teen 16–19	18.0	16.1
Nonmetropolitan		
Total	8.3	7.2
Male 20+	7.2	6.2
Female 20+	7.7	6.3
Teen 16–19	19.4	19.6

Source: Bureau of Labor Statistics. *Employment and Earnings* Table 57, January 1988.

Rural workers...were 50 percent more likely to experience severe loss of earnings [following displacement]—a more than 25 percent cut in earnings.

Earnings and Benefit Loss

How do the earnings on new jobs compare with those on the old job when displaced workers are reemployed? This can be determined by examining the ratio of current to former weekly earnings for workers reemployed at the time of the survey.[6] A displaced worker is considered to have experienced an "earnings loss" if his or her current earnings are lower than his or her earnings on the previous job. Many workers suffer no loss of earnings as a result of displacement (Table 6): 40 percent were reemployed at the same or better pay (a ratio greater than 100). At the same time, however, 32.6 percent earned less than three-quarters of their former earnings, and 13.6 percent earned less than one-half their former rate of pay. Again, rural workers appear to have a more difficult adjustment to job loss. Displaced rural workers, for example, were 50 percent more likely to experience

severe loss of earnings—a more than 25 percent cut in earnings—than workers in large urban areas (17.5 versus 11.7). The median earnings loss among displaced rural workers was 12.3 percent, more than twice as much as the 5.2 percent median earnings loss among workers in large urban areas.

TABLE 6

Earnings Losses of Displaced Workers*

Percentage Earnings Loss**	Total	Rural	Urban	
			Small	Large
Total	100.0%	100.0%	100.0%	100.0%
No Loss	40.0	33.4	34.8	44.0
	(1.0)	(1.9)	(2.4)	(2.5)
0 to 25	27.5	29.5	27.8	26.6
	(.9)	(1.8)	(2.3)	(2.2)
25 to 50	19.0	19.6	22.5	17.8
	(.8)	(1.6)	(2.1)	(1.9)
50+	13.6	17.5	15.0	11.7
	(.7)	(1.5)	(1.8)	(1.6)
Median Earnings Loss	7.9	12.3	14.7	5.2

* For sample description and definitions, see Table 1. Estimated standard errors in parentheses. Former earnings adjusted by changes in the wage and salary component of the BLS Employment Cost Index to reflect wages currently on that job.

** The percentage by which current earnings are less than earnings on the job from which the worker was displaced.

Displaced workers also face the high risk of losing an important employment-related fringe benefit—group health insurance.

Displaced workers also face the high risk of losing an important employment-related fringe benefit—group health insurance. Most Americans covered by private medical insurance obtain it as a fringe benefit of their job or the job of another family member. When the job is terminated, however, this benefit quickly terminates as well—usually within 30 to 60 days after the layoff. Concern with this problem led to federal legislation allowing workers to participate in their former group health insurance plan for a limited time at their own expense. Two states (Massachusetts and Connecticut) enacted legislation mandating extension of employer-paid

benefits for up to four months following layoff (Podgursky and Swaim, 1987).

Only 65 percent of the workers displaced in rural areas obtained new health insurance coverage.

Many displaced workers lose health insurance coverage following displacement. As Table 7 shows, only 70.3 percent of the displaced workers formerly covered by a group health insurance plan on their old job were covered by *any* (employer-related or other) group policy in January 1986. Only 65 percent of the workers displaced in rural areas obtained new health insurance coverage, far less than the 73.5 percent of urban workers who maintained coverage. One reason for the low coverage rates among displaced workers, particularly rural workers, is that many were not reemployed. However, this is not the main reason for the loss of coverage. Even when one looks only at health insurance coverage rates for those workers who were reemployed (row 2), one finds that more than one-fifth lost their coverage. Once again, rural workers fare worse than workers in large urban labor markets—even reemployed rural workers are more likely to lose this benefit. This may reflect the fact that rural jobs generally provide fewer fringe benefits such as health insurance (Marshall, 1974; Jensen, 1982). As a result, rural workers who lose jobs which do provide health insurance are less likely to find new employment with health care coverage.

TABLE 7

Job Displacement and Health Insurance Coverage*

January 1986
Group Health Insurance Coverage

	Total	Rural	Urban	
			Small	Large
Total	70.3%	65.0%	66.5%	73.5%
	(.9)	(1.8)	(2.3)	(1.2)
Reemployed	78.5	74.0	73.2	81.2
	(.9)	(1.9)	(2.5)	(1.2)

* Displaced workers formerly covered by health insurance on their old job. For further sample description, see Table 1. Estimated standard errors in parentheses.

Multivariate Analysis of Economic Losses

The statistics in Tables 1-7 suggest that nonmetropolitan, or rural, workers fare worse than urban workers following displacement. One might ask, however, whether this is primarily due to the demographic characteristics of these workers or to their location. Table 1 demonstrates, for example, that rural workers tend to have somewhat lower educational attainment than do urban workers. They are also more likely to be white, male, and non-Hispanic. To what extent do these demographic differences explain urban-rural differences in displacement costs? Do demographically similar workers fare differently following displacement in rural and urban labor markets?

A multivariate statistical analysis of the data, which standardizes for differences in age, educational attainment, race, sex, Hispanic ethnicity, manufacturing employment, and former earnings (explained in greater detail in the appendix), yields the following findings:

- Most displaced workers experience an earning loss following their reemployment, meaning that the pay on their new job is less than that on their former job. However, displaced rural workers experience a proportionately greater drop in earnings when they become reemployed. Statistical analysis shows that, compared to urban workers, rural workers suffer an additional 15 to 20 percent loss of earnings on their new jobs relative to their old jobs.

Compared to urban workers, rural workers suffer an additional 15 to 20 percent loss of earnings on their new jobs relative to their old jobs.

- The length of an expected spell of joblessness following displacement is significantly *longer* for rural workers as compared to workers in small and large urban areas. Our estimate is that rural workers are jobless from 2 to 43 percent longer than comparable urban workers.

Joblessness following displacement is significantly longer for rural workers as compared to workers in small and large urban areas.

Conclusions

The findings in this study suggest that the thin labor markets and adverse structural changes noted by McGranahan (1988) and others have placed displaced rural workers at a particular disadvantage. Proportionately more rural workers lose their jobs and, following their job loss, rural workers experience a longer period without work. Moreover, compared to urban workers, the new jobs found by rural workers are likely to pay far less than did their previous job.

The new jobs found by rural workers are likely to pay far less than did their previous job.

To the extent that these large economic losses reflect diminished earnings prospects in rural areas, any policy response must be directed toward renewed earnings growth for rural employment. In addition, if dislocated worker adjustment is to be targeted to those in greatest need, then rural workers deserve special attention.

Appendix

The Displaced Worker Survey

In January 1986, all respondents from the roughly 60,000 households in the Current Population Survey (CPS) were asked whether they or any adult member of their household (i.e., aged 20 and older) had "lost or left a job since 1981 because of a plant closing, an employer going out of business, a layoff from which [the worker] was not recalled, or other similar reasons." An affirmative response triggered a series of supplemental questions concerning the nature of the lost job and the post-displacement labor market experience. These supplemental questions, which comprise the Displaced Worker Survey (DWS), augment the extensive demographic and labor force data in the basic monthly CPS. Using the Bureau of Labor Statistics' definition, a displaced worker is defined either as one who lost a job due to a plant shutdown, business failure, or business relocation, or as a worker whose employer remained in operation but who was permanently laid off due to slack work or whose job was otherwise eliminated.

In the analysis for this report, the sample was limited to workers between the ages of 20 and 61 who were displaced from full-time jobs. Workers 62 or older were excluded since these workers generally are eligible for Social Security retirement payments (and possibly private pensions as well). They thus face a different set of constraints or choices regarding the labor market than do younger workers. The focus of the study was on workers displaced from full-time jobs for reasons of necessity and choice. The DWS only provides information on usual weekly earnings and the full-time/part-time status of the worker's former job. By limiting our sample to full-time workers we thus control in a crude manner for hours of work on the old job. Since full-time workers have made a greater commitment to the labor market and, in general, make a larger contribution to the typical household's income than do part-time workers, we judge displacement of such workers to be of the greatest policy interest. Finally, the sample included only those workers who have been displaced from their previous job for a year or more; that is, workers who have had *at least* one full year to adapt to the loss of their former job by the time of the January 1986 survey.

Throughout this study the post-displacement experience of workers in rural labor markets is compared with those in small and large urban markets. The operational definition of "rural" worker is one who does not reside in a Metropolitan

Statistical Area (MSA) in January 1986. Urban workers are divided into two groups—those residing in an MSA with a 1980 population between 100,000 and 500,000, designated as "small urban," and those residing in an MSA larger than 500,000, designated as "large urban." A very small number of workers (roughly three percent of the sample) whose location is suppressed for reasons of confidentiality by the Census Bureau were excluded from the study.

Before proceeding further, two caveats are in order regarding the rural-urban classification. First, workers are classified on the basis of residence and not on where they work. It is possible that some workers classified as "rural" commute to the urban labor markets to work (and vice versa). The CPS unfortunately provides no information on work location. A second caveat concerns migration following displacement. Roughly one-fifth of the displaced worker sample moved to a new city or town following displacement. (The following percentages of workers reported that they moved to a new city or county following displacement: rural, 21.5 percent; small urban, 23.4 percent; large urban, 21.0 percent. Note that the rural-urban classification is based on the worker's location on the survey date and not at the time of displacement.) Thus, it is likely that some workers now classified as "urban" were "rural" at the time of displacement (and vice versa). Random misclassification of this sort will bias the urban-rural loss gap toward zero. If rural-to-urban migration predominates and rural losses are larger, the estimate of the urban-rural loss gap will be *biased downward*. In such a case, however, nominal earnings losses will overstate real earnings losses for rural-to-urban migrants (and vice versa for urban-to-rural migrants) since the cost of living is generally lower for rural workers.

Multivariate Analysis of Jobless Duration and Earnings Loss

In Appendix Table 1 we report multivariate statistical estimates of the effect of rural-urban location on short-term displacement losses (duration of joblessness) and long-term losses (the natural log of the ratio of current to former weekly earnings). These multivariate estimates are the basis for statements in the text that even after controlling for demographic and other differences, rural displaced workers fare worse.

First consider jobless duration. The second column of the table reports the estimated coefficients of a Weibull regression model. The Weibull regression model, sometimes called a "survivor" model, is specifically designed to analyze phe-

APPENDIX TABLE 1

Multivariate Analysis of Jobless Duration and Earnings Loss
(t-statistics in parentheses)

	Dependent Variable			
	Jobless Duration[a]		Ratio of Current to Former Earnings[b]	
Variable	$\bar{X}$	$\hat{\beta}$	$\bar{X}$	$\hat{\beta}$
Constant	—	4.732** (11.70)	—	1.958** (15.69)
Rho	—	.635** (50.64)	—	—
Log (Former Earnings)	5.82	-.012 (-1.67)	5.83	-.491** (21.16)
Age (yrs.)	36.4	.031** (8.34)	35.8	-.001 (-.94)
Education (yrs.)	12.5	-.098** (-5.55)	12.7	.042** (8.29)
Black[c]	.099	.700** (5.15)	.096	-.183** (-5.06)
Male[c]	.635	-.444** (-5.05)	.673	.235** (9.46)
Hispanic[c]	.046	-.064 (-.34)	.043	-.048 (-.92)
White Collar[c]	.420	-.267** (-2.97)	.451	.040 (1.60)
Manufacturing[c]	.474	.261** (3.26)	.457	-.027 (-1.22)
Agriculture[c]	.019	-.581* (-2.19)	.021	-.006 (-.09)
Rural[c]	.295	omitted	.294	omitted
Small Urban[c]	.158	-.231* (-1.98)	.164	.054 (1.66)
Large Urban[c]	.548	-.189* (-2.22)	.570	.161** (6.39)
Adj. R^2	—	—	.190	—
Sample Size	2,309	2,309	2,330	2,330

a. Maximum-likelihood estimates of an exact discrete Weibull survivor model. For a description of this model see Swaim and Podgursky (1988). These coefficients indicate the approximate proportionate change in expected weeks of joblessness for any worker given a unit change in the independent variable.

b. Ordinary Least Squares estimates. Dependent Variable = Log (Current Weekly Earnings/Trend-Adjusted Former Weekly Earnings)

c. Dichotomous (0-1) variable where 1=yes (e.g., Male=1 if the worker is male, 0 if female)

* Significant at five percent. ** Significant at one percent.

nomenon measured over time (e.g., lifetimes, unemployment duration, strike duration. For a further description of the Weibull model see Podgursky and Swaim, 1987a). The interpretation of the coefficients is straightforward: they indicate the approximate proportionate effect of a unit change in the independent variable on the expected average length of joblessness. A negative sign thus indicates a shorter spell, and a positive sign a longer spell.

The coefficients of interest for this study are at the bottom of Appendix Table 1. We have coded three dummy or 0-1 variables to indicate residence. Since "rural" is omitted from the model, the interpretation of the remaining two dummy variables is the difference between rural and small or large urban workers, holding other characteristics of the workers constant. Asterisks indicate statistical significance. We see that workers in small and large urban areas have significantly shorter spells of joblessness than do rural workers. Unfortunately, the relatively low values of the t-ratios imply that the point estimates of the true effect are imprecise. A 95 percent confidence interval on the large urban coefficient, for example, would imply that workers in rural labor markets have jobless spells from 2 to 43 percent longer than similar workers in urban markets.

The last column of Appendix Table 1 reports the Ordinary Least Squares (OLS) coefficients of a model of earnings loss for workers reemployed at the time of the survey in January 1986. The dependent variable is the natural log of the ratio of current to adjusted former earnings. Since workers were displaced at different dates over the interval from 1981 to 1984, their reported former earnings have been inflated to January 1986 levels using published data from the wage and salary component of the Employment Cost Index. The purpose of this is to roughly approximate what the workers' wages would have been in January 1986 had they not been laid off. These coefficients give the approximate proportionate effect of a unit change in the independent variable on the ratio of current to former earnings. A positive sign indicates a higher ratio and thus a smaller loss. A negative coefficient indicates a larger loss.

As in the previous table, the most relevant coefficients are at the bottom of the table. Once again, "rural" is the omitted dummy, hence, the comparison is between small or large urban and rural workers. Both dummy variables take their expected positive sign, but once again, only the large urban dummy is statistically significant. Its magnitude suggests that workers in large urban areas are reemployed at a weekly wage which is a considerably higher fraction of their former earnings as compared to rural workers. A 95 percent confidence interval on the large urban coefficient implies that the

mean ratio of current to former earnings for displaced workers in large urban markets is from 15 to 20 percent higher than that of similar rural workers.

Endnotes

1. These losses are larger for certain demographic groups (blacks, women, older workers) and for workers with less formal schooling or in less-skilled blue-collar occupations (Podgursky and Swaim, 1987a,b; Kruse, 1988). Limited data on whether workers had prior knowledge of displacement strongly suggest that workers with advance notice suffer smaller losses (Addison and Portugal, 1987; Ehrenberg and Jakubson, 1988; Swaim and Podgursky, 1989). Howland and Peterson (1988) explore the effect of labor market conditions on the economic cost of displacement for manufacturing workers in larger MSAs.

2. For a further description of the Displaced Worker Survey, see Horvath (1987).

3. Let $\bar{X}_u$ and $\bar{X}_r$ denote the sample means of a random variable describing displaced workers (e.g., age, education), and let s_u and s_r denote the standard errors of these means. To test whether the *difference* between $\bar{X}_u$ and $\bar{X}_r$ is statistically significant, compute the following statistic:

   $$(\bar{X}_u - \bar{X}_r) \; / \; \sqrt{s_u^2 + s_r^2}$$

   If this statistic is larger in absolute value than two, the gap is statistically significant. Under each mean we report the estimated standard error of the mean. This is used to judge whether the urban-rural differences are statistically significant.

4. Unlike the familiar measure of unemployment duration in the monthly CPS, the DWS question does not specifically refer to active job search. Thus, a reported spell of joblessness may include one or more periods of suspended job search and labor force withdrawal. Econometric studies have shown, however, that the distinction between "unemployed" and "out of the labor force" is problematic for workers with long and recurrent spells of unemployment (Clark and Summers, 1979). Thus, the DWS measure of jobless duration is arguably a better indicator of reemployment difficulties for displaced workers. In order to emphasize this difference, however, we consistently refer to our measure as *jobless* rather than *unemployment* duration.

5. Calculated as [11.1/(77.2+11.1)]x100.

6. Because up to five years may have passed since displacement, in computing this ratio we have inflated the worker's former earnings using an index based on the worker's former occupation, sector of employment (government versus private), and year of displacement using the wage and salary component of the Employment Cost Index published by the Bureau of Labor Statistics. The purpose of this exercise is to approximate what the worker would have been earning in January 1986 had he or she remained at the former job.

Bibliography

Addison, John T., and Pedro Portugal. "The Effect of Advance Notification of Plant Closings on Unemployment." *Industrial and Labor Relations Review*, No. 41, pp. 3–16, October 1987.

Bloomquist, Leonard. "Rural Manufacturing Gets Mixed Review." *Rural Development Perspectives*, No. 4, pp. 22-26, June 1988.

Clark, Kim B., and Lawrence H. Summers. "Labor Market Dynamics and Unemployment: A Reconsideration." *Brookings Papers on Economic Activity*, pp. 13-60,1979.

Ehrenberg, Ronald G., and George H. Jakubson. *Advance Notice Provisions in Plant Closing Legislation*. Kalamazoo: W.E. Upjohn Institute for Employment Research, 1988.

Horvath, Francis W. "The Pulse of Economic Change: Displaced Workers of 1981-85." *Monthly Labor Review*, No. 110, pp. 3-12, June 1987.

Howland, Marie, and George E. Peterson. "Labor Market Conditions and the Reemployment of Displaced Workers." *Industrial and Labor Relations Review*, No. 42, pp. 109-122, October 1988.

Jensen, Helen H. "Analysis of Fringe Benefits for Nonmetropolitan Versus Metropolitan Employee Compensation." *American Journal of Agricultural Economics*, No. 64, pp. 124-127, February 1982.

Kruse, Douglas L. "International Trade and the Labor Market Experience of Displaced Workers." *Industrial and Labor Relations Review*, No. 41, pp. 402-417, April 1988.

Majchrowicz, T. Alexander, and Linda M. Ghelfi. "Employment and Earnings in Nonmetro Industry, 1979-86." U.S. Department of Agriculture, Economic Research Service, Agriculture Information Bulletin No. 552, November 1988.

Marshall, Ray. *Rural Workers in Rural Labor Markets*. Salt Lake City: Olympus Publishing Co., 1974.

McGranahan, David A. "Rural Workers at a Disadvantage in Job Opportunities." *Rural Development Perspectives*, No. 4, pp. 7-12, June 1988.

Mishel, Larry, and Michael Podgursky. "The Incidence of Displacement." *Industrial Relations Research Association, Proceedings of the 40th Annual Meetings*, Madison: Industrial Relations Research Association, 1988.

Podgursky, Michael, and Paul Swaim. "Duration of Joblessness Following Displacement." *Industrial Relations*, No. 26, pp. 213-226, Fall 1987.

_____. "Job Displacement and Earnings Loss: Evidence from the Displaced Worker Survey." *Industrial and Labor Relations Review*, No. 41, pp. 17-29, October 1987.

Ruhm, Christopher J. "The Economic Consequences of Labor Mobility." *Industrial and Labor Relations Review*, No. 41, pp. 30-42, October 1987.

Swaim, Paul, and Michael Podgursky. "Advance Notice and Job Search: The Value of an Early Start." *Journal of Human Resources*, Forthcoming 1989.

U.S. Department of Agriculture, Economic Research Service. *Rural Economic Develoment in the 1980s: Preparing for the Future*. ERS Staff Report, July 1987.

U.S. Department of Labor, Secretary of Labor's Task Force on Economic Adjustment and Worker Dislocation. *Economic Adjustment and Worker Dislocation in a Competitive Society*. Washington, D.C.: December 1986.

U.S. Department of Labor. *Employment and Earnings*. Washington, D.C.: January 1987.

The Economic Policy Institute was founded in 1986 by a group of economic policy experts which includes Barry Bluestone, Robert Kuttner, Ray Marshall, Robert Reich, Lester Thurow, and EPI President Jeff Faux. The goal of the Institute is to encourage scholarship on a variety of economic issues and to broaden the public debate about strategies to achieve a prosperous and fair economy.

RECENT PUBLICATIONS

EPI STUDY SERIES:

Telecommunications Policy, High Definition Television, and U.S. Competitiveness
By Robert B. Cohen and Kenneth Donow **$8.00**

The Consumer Electronics Industry and the Future of American Manufacturing: How the U.S. Lost the Lead and Why We Must Get Back in the Game
By Susan Walsh Sanderson **$8.00**

Keeping Jobs in Fashion: Alternatives to the Euthanasia of the U.S. Apparel Industry
By Richard Rothstein **$8.00**

Job Displacement and the Rural Worker
By Michael Podgursky **$8.00**

Beyond Free Trade and Protectionism: The Public Interest in a U.S. Auto Policy
By Daniel Luria **$8.00**

Toward an Industrial Extension Service (November 1989)
By Philip Shapira **$8.00**

Rural Family Incomes (October 1989)
By Stephen Rose and David Fasenfest **$8.00**

Strengthening the Progressive Income Tax: The Responsible Answer to America's Budget Problem
By Richard A. Musgrave **$5.00**

Toward a High-Wage, High-Productivity Service Sector
By Lester Thurow (With Background paper by Louise Waldstein) **$5.00**

Workforce Policies for the 1990s
By Ray Marshall and Paul Osterman **$5.00**

The State of Working America
By Lawrence Mishel and Jaqueline Simon **$5.00**

The Austerity Trap and the Growth Alternative
By Jeff Faux **$3.00**

Manufacturing Numbers: How Inaccurate Statistics Conceal U.S. Industrial Decline
ByLawrence Mishel **$5.00**

Prisons for Profit: Public Justice, Private Interests
By John Donahue **$4.00**

The Limits of Privitization
By Paul Starr **$3.00**

Economic Competitiveness: The States Take the Lead
By David Osborne **$4.00**

No Longer Leading: A Scorecard on U.S. Economic Performance
By Lucy Gorham **$4.00**

EPI SEMINAR SERIES:

Declining American Incomes and Living Standards
By Frank Levy, Barry Bluestone, Lester Thurow Ralph Whitehead Jr., and Jeff Faux **$4.00**

EPI WORKING PAPER SERIES:

No. 101
Better Jobs or Working Longer for Less
By Lawrence Mishel **$4.00**

No. 102
Trading Away Jobs: The Effects of the U.S. Merchandise Trade Deficit on Employment
By Faye Duchin and Glenn-Marie Lange **$4.00**

No. 103
Family Incomes in the 1980s: New Pressure on Wives, Husbands, and Young Adults
By Stephen Rose and David Fasenfest **$4.00**

EPI BRIEFING PAPER SERIES:

The Consequences of Failing to Develop a Strong HDTV Industry in the U.S.
By Robert Cohen **$2.00**

False Fears of Wage Led Inflation
By Wendy Rayack **$2.00**

Advance Notice of Plant Closings: Benefits Outweigh the Costs
By Lawrence Mishel **$2.00**

Getting Rid of the Trade Deficit: A Cheaper Dollar Is Not Enough
By Jeff Faux **$2.00**

Reducing the Deficits: Send the Bill to Those Who Went to the Party
By Jeff Faux **$2.00**

Increasing the Minimum Wage: The Macroeconomic Impact
By F. Gerard Adams **$2.00**

Competitiveness and Balanced Budgets
By Jeff Faux **$2.00**

Family Incomes in Trouble
By EPI Staff **$2.00**

High Interest Rates: It's Not Just the Deficit
By Richard Medley **$2.00**

Economic Policy Institute